

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
12 May 2005 (12.05.2005)

PCT

(10) International Publication Number
WO 2005/042198 A2

- (51) International Patent Classification⁷: B23F
(21) International Application Number: PCT/US2004/033643
(22) International Filing Date: 12 October 2004 (12.10.2004)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data: 60/513,172 21 October 2003 (21.10.2003) US
(71) Applicant (for all designated States except US): THE BRAUN CORPORATION [US/US]; 631 West 11th Street, P.O. Box 310, Winamac, IN 46996 (US).
(72) Inventors; and
(75) Inventors/Applicants (for US only): KISER, Aaron [US/US]; 8434 N. CR 600 W., Royal Center, IN 46978 (US). GOODRICH, Ronald [US/US]; 2716 Northwood Drive, Logansport, IN 46947 (US).
(74) Agent: STERN, Martin, L.; Michael Best & Friedrich LLP, 401 N. Michigan Avenue, Suite 1900, Chicago, IL 60611 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

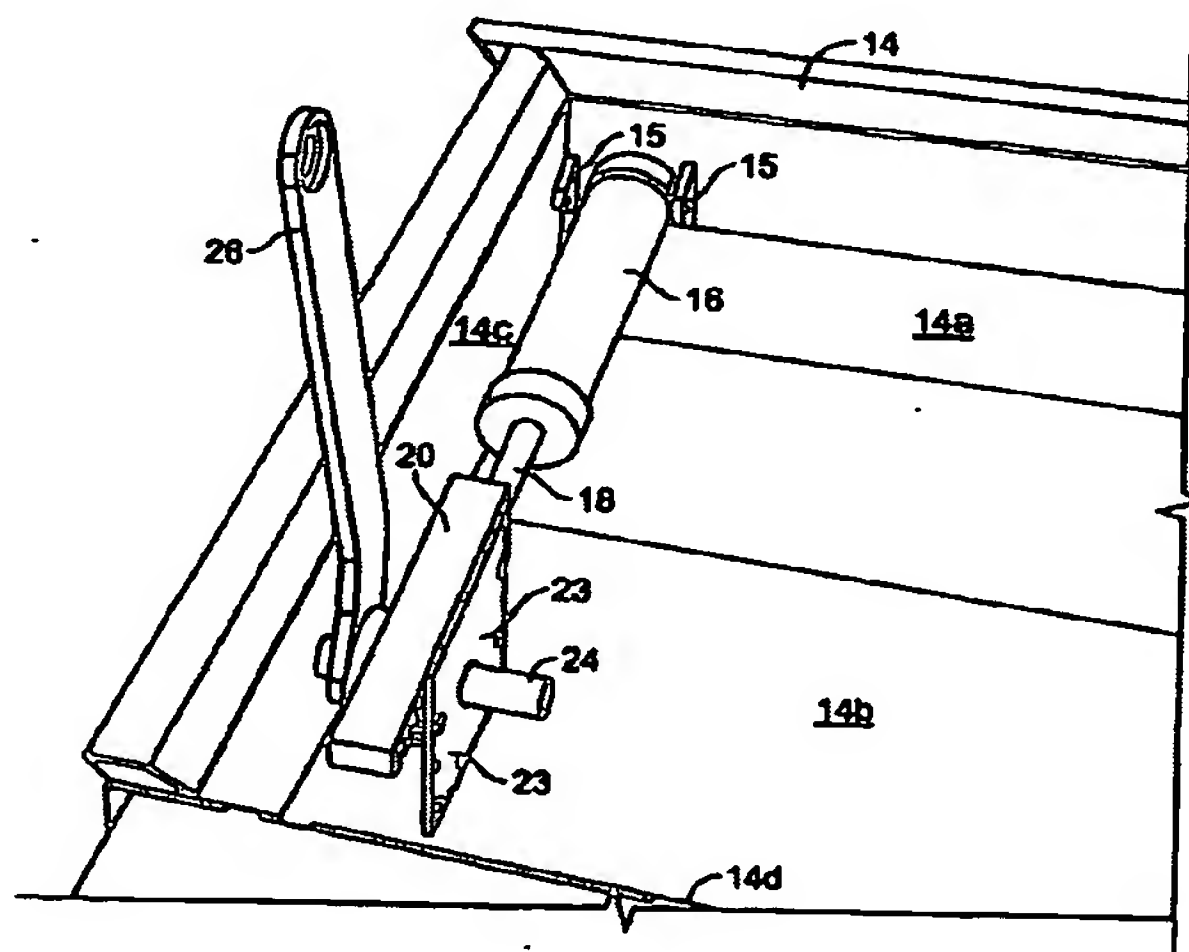
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: DRIVE APPARATUS FOR A MOBILITY ACCESS DEVICE



(57) Abstract: A linear drive system for reversibly operating a wheelchair ramp or other mobility access device is provided. The drive system for the mobility access device includes an actuator and a drive apparatus coupled thereto for moving the access device or portion thereof. The actuator, which may be a hydraulic cylinder, electric actuator or the like, has a linearly moving arm that cooperates with the drive apparatus including a gear rack and a spur gear. The gear rack is coupled to the moving arm and mates with the spur gear that rotates on a shaft in response to the linear movement of the moving arm. A drive link is coupled with the spur gear for pivoting about the shaft to deploy and stow the access device.

WO 2005/042198 A2

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 018778-9206-WO00	FOR FURTHER ACTION		See item 4 below
International application No. PCT/US2004/033643	International filing date (<i>day/month/year</i>) 12 October 2004 (12.10.2004)	Priority date (<i>day/month/year</i>) 21 October 2003 (21.10.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant THE BRAUN CORPORATION			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

	Date of issuance of this report 24 April 2006 (24.04.2006)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Nora Lindner
Facsimile No. +41 22 740 14 35	Telephone No. +41 22 338 89 65

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
MARTIN L. STERN
MICHAEL BEST & FRIEDRICH LLP
401 N. MICHIGAN AVENUE
SUITE 1900
CHICAGO, IL 60611

PCT

REC'D 19 SEP 2005

WIPO

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference 018778-9206WO00		Date of mailing (day/month/year) 15 SEP 2005
FOR FURTHER ACTION See paragraph 2 below		
International application No. PCT/US04/33643	International filing date (day/month/year) 12 October 2004 (12.10.2004)	Priority date (day/month/year) 21 October 2003 (21.10.2003)
International Patent Classification (IPC) or both national classification and IPC IPC(7): A61G 3/06 and US Cl.: 414/537		
Applicant THE BRAUN CORPORATION		

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

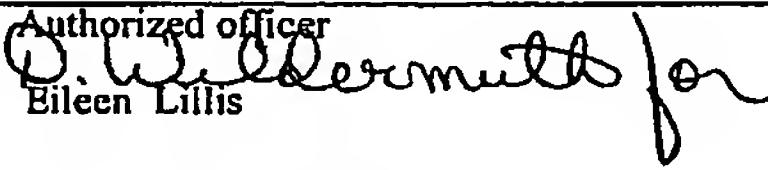
2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer  Eileen Lillis Telephone No. 703-308-1113
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US04/33643

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/33643

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>7-9 and 26-28</u>	YES
	Claims <u>1-6,10-25,29-34</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-34</u>	NO
Industrial applicability (IA)	Claims <u>1-34</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Claims 1-6, 10-25, and 29-34 lack novelty under PCT Article 33(2) as being anticipated by Fontecchio (US 4,909,700).
Re claims 1-6, 10-25, and 29-34, Fontecchio teaches a wheels chair ramp with a linear actuator 100, gear rack 86, complimentary gear 56 and linkages 80,78.

Claims 1-34 lack an inventive step under PCT Article 33(3) as being obvious over Fontecchio (US 4,909,700).
Re claims 7-9,26-28, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Fontecchio to have the gear rack be any shape desired in order to get the necessary spacing and travel paths to make the gears mesh correctly.

Claims 1-34 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.